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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/707,907

01/23/2004

Michael Ben Sellers

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CANTOR COLBURN, LLP
20 Church Street
22nd Floor
Hartford, CT 06103

EXAMINER

WEATHERBY, ELLSWORTH

ART UNIT

PAPER NUMBER

3768

NOTIFICATION DATE

DELIVERY MODE

04/15/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary	Application No. 10/707,907	Applicant(s) SELLERS, MICHAEL BEN	
	Examiner ELLSWORTH WEATHERBY	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,12-18 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,12-18 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 01/08/2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 7,190,170 has been reviewed and is NOT accepted.

The terminal disclaimer was not properly signed. That is, the attorney or agent has not provided a registration number.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3, 12-15, 17 and 21-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S.

Patent No. 7,190,170. Although the conflicting claims are not identical, they are not patentably distinct from each other because both substantially claim the same subject matter including first and second magnetic elements and an epoxy or glue disposed between the first and second elements where the epoxy or glue contains a plurality of particles, including microparticles or nanoparticles, uniformly suspended in the epoxy or glue to resist discharging. Although the '170 patent does not expressly teach a chemical hardening compound and a particular volume percentage of the particles, however one of ordinary skill would recognize that the broader '170 patent having a means for resisting discharges would teach on the particular volume percentage limiting current to less than 10 microamps. It would have been obvious to modify the '170 patent to include the hardener. The motivation to modify the '170 patent would have been to provide added structural integrity to the electrical discharge limiting compound disposed in the electromagnetic coil.

Claim Rejections - 35 USC § 103

4. Claims 1-2, 6-7, 12-15, 17-18, 21-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz et al. (USPN 6,642,717) in view of Wang et al. (Pub. No.: 2004/0225213).

5. Dietz et al. '717 teaches a gradient tube extending along an axis, the tube including first and second gradient coils (abstract; col. 2, l. 35- col. 3, l. 30) and a conductive compound disposed between the first and second gradient coils (col. 2, ll. 36-67; Figure, ref. 34), the conductive compound being an epoxy resin or glue having a

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plurality of conductive particles and a chemical hardening compound therein (col. 2, ll. 56-col. 3, l. 10; col. 3, ll. 43-55), and a plurality of conductive particles 38 disposed substantially uniformly within the resin or glue (col. 3, ll. 11-29), at least a portion of the plurality of conductive particles being in the range of 1-10 micrometers in diameter configured to limit a current flowing through the device (col. 3, ll. 26-30; claim 5).

Regarding the limitation including 10 microamps, the Examiner stands that Applicant has not disclosed any particular criticality of the 10 microamp limit. Therefore, absent any criticality, the limit "less than 10 microamps" is not given patentable weight over Dietz et al. '717 because both Dietz et al. '717 and the present application are concerned with limiting current.

6. Dietz et al. '717 teaches all the limitations of the claimed invention except for expressly teaching that the glue comprises a polyester resin. Dietz et al. '717 also does not expressly teach the use of silver or gold particles. Dietz et al. '717 also does not expressly teach that the volume percentage of the plurality of conductive particles is 0.1% or less of a volume of the conductive compound.

7. In the same field of endeavor, Wang et al. '213 teaches a MRI coated assembly (abstract). Wang et al. '213 goes on, teaching as known in the art using a polyester compound in a glue [0242]. Wang et al. 213 also teaches the use of ferromagnetic particles embedded in a resinous material at a concentration of about 0.001% to about 10% [0010]. Wang et al. '213 further teaches the use of electrically conductive particles including silver or gold [0206].

8. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coated gradient coils of Dietz et al. '717 in view of the coatings of Wang et al. '213. The motivation to modify Dietz et al. '717 in view of Wang et al. '213 would have been to select any resin mixture from a finite list of well known resin mixtures commonly used in the art to be used with MRI with reasonable expectations of success, as taught by Wang et al. '213 [0242].

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz et al. (USPN 6,642,717) in view of Wang et al. (Pub. No.: 2004/0225213) as applied to claim 1 above, and further in view of Doty (USPN 5,530,355).

10. Dietz et al. '717 in view of Wang et al. '213 teaches all the limitations of the claimed invention except for expressly teaching that the conductive particles comprise carbon particles.

11. In the same field of endeavor, Doty '355 teaches using carbon particles in a shielded coil system (col. 14, l. 57- col. 15, l. 13).

12. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coated gradient coils of Dietz et al. '717 in view of Wang et al. '213 with the use of carbon particles of Doty '355. The motivation to modify Dietz et al. '717 in view of Wang et al. '213 with Doty '355 would have been to aid in casting or curing, as taught by Doty '355 (col. 14, l. 57- col. 15, l. 13).

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13. Claims 5 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz et al. (USPN 6,642,717) in view of Wang et al. (Pub. No.: 2004/0225213) as applied to claims 2 and 22 above, and further in view of Lehne et al. (USPN 5,235,283).

14. Dietz et al. '717 in view of Wang et al. '213 teaches all the limitations of the claimed invention except for expressly teaching that the epoxy resin comprises a bisphenol-A resin.

15. In the same field of endeavor, Lehne et al. '283 teaches using biphenol-A resin in an epoxy resin (col. 4, ll. 39-58).

16. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coated gradient coils of Dietz et al. '717 in view of Wang et al. '213 with the bisphenol-A resin of Lehne et al. '283. The motivation to modify Dietz et al. '717 in view of Wang et al. '213 with Lehne et al. '283 would have been to aid in casting or curing, as taught by Lehne et al. '283 (col. 4, ll. 39-58).

Response to Arguments

17. Applicant's arguments filed 01/08/2009 have been fully considered but they are not persuasive.

18. Regarding the 10/30/2008 nonstatutory double patenting rejection of claims 1-3, 12-15, 17 and 21-22 over claims 1-18 of U.S. Patent No. 7,190,170, the examiner stands that the 01/08/2009 Terminal Disclaimer that "...obviates the foregoing rejection..." is disapproved because the attorney or agent has not provided a registration number.

19. Regarding applicants allegation that Dietz et al. does not provide any teaching of "...a volume percentage of conductive particles is 0.1% or less of a volume of conductive compound...". The Examiner notes that Wang et al. was set forth to teach this particular limitation. See above (Wang: 0010).

20. Applicant further alleges that Dietz does not provide any teaching of limiting the current flowing through the conductive compound is limited to less than 10 microamps. Here, the examiner relied on Dietz (col. 3, ll. 26-30; claim 5) to teach limiting current. Although Dietz does not expressly teach limiting the current to less than 10 microamps, it is clear by the disclosure of Dietz that the damping structure includes fillers of variable composition for the purpose of providing optimal electrical conductivity and improved electromagnetic compatibility. Here, Dietz teaches both *decreasing* the current limit or increasing it; optimization of a physical property through it's composition. Thus, the examiner stands that the combination of Dietz in view of Wang anticipates limiting the current to less than 10 microamps because Dietz teaches variable current limits through the use of various filler material compositions. That is, the examiner stands that the particulars of "less than 10 microamps" are an obvious optimization of parameters which are not given patentable weight in view of disclosure Dietz in view of Wang, who teach the claimed structure and function. Accordingly, claims 1-2, 6-7, 12-15, 17-18, 21-22, 24 and their respective dependant claims stand rejected.

21. Applicant further alleges that Wang et al. does not provide any teaching of: "*a volume percentage of the plurality of conductive particles is 0.1% or less of a volume of the conductive compound..*". The examiner stands that the disclosure and incorporated

references of Wang teaching a concentration of 0.001% to about 10% (i.e. 0010) anticipates the claimed *volume percentage of the plurality of conductive particles is 0.1% or less of a volume of the conductive compound*. That is, the examiner stands that the claimed *volume percentage* is not patentably distinguishable over the disclosures of concentration of Wang because these are mere variations in a particular method of empirically determining or describing a physical property of the same compound.

22. Applicant further alleges that Dietz et al. in view of Wang does not teach a potting compound layer having a plurality of conductive particles being at least one of *silver particles and gold particles*, citing that Wang uses the conductive particles on a sheath. Here, the examiner had not relied on Wang to cure the deficiency in the compound composition disclosure of Dietz. That is, Wang teaches a compound composition comprising conductive particles being at least one of *silver particles and gold particles* [0206]. Accordingly, claim 12 stands rejected.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLSWORTH WEATHERBY whose telephone number is (571) 272-2248. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/EW/

/Long V Le/

Supervisory Patent Examiner, Art Unit 3768